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3M Docket No.: 55559US002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John R. Jacobson et al.
Serial No.: 09/808,584
Filed: March 14, 2001
Title: COATING APPARATUS

Art Unit: 1734
Examiner: Edwards

Assistant Commissioner for Patents
Washington, D.C. 20231
BOX AF

APPEAL BRIEF

Appellants submit the following brief in support of their Notice of Appeal, dated February 10, 2003, in response to the outstanding Office Action dated December 5, 2002.

I. Real Party In Interest

The real party in interest is 3M Innovative Properties Company.

II. Related Appeals and Interferences

There are no related appeals or interferences pending.

III. Status of Claims

Claims 1-57 are pending. Claims 36-56 have been withdrawn from consideration.

IV. Status of Amendments

All submitted amendments have been entered.

V. Summary of Invention

Appellants' invention features a coating apparatus constructed such that when an article is not available for coating, the liquid coating composition is not transferred from the applicator. (Appellants' Specification, page 5, lines 28-29).

In one aspect, the apparatus for coating an article includes an applicator, a conveyor for sequentially transporting a plurality of articles to the applicator, and a metering bar positioned against the applicator to meter a predetermined amount of coating composition to the applicator for transfer to an article transported to the applicator by the conveyor (Id. at page 1, lines 28-32). In some embodiments, the end of

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the metering bar positioned against the applicator has a radius of at least about 2.5 mm, or even a radius of at least about 4.0 mm (Id. at page 2, lines 4-6).

The metering bar and the applicator can be arranged to enable the metering bar to exert a force of at least about 35 g/cm width, or even a force of from about 45 g/cm width to about 900 g/cm width, against the applicator (Id. at page 2, lines 6-9).

The conveyor and the applicator can be configured to enable the applicator to apply a coating to the edge face of a roll of tape disposed between the conveyor and the applicator (Id. at page 2, lines 10-12).

VI. Issues

Are claims 1-5, 9-16, 18-35 and 57 patentable under 35 U.S.C. § 102(b) over U.S. 5,804,256 (Schafer I)?

Are claims 1, 3, 9, 11-13, 16, 18-20, 25-27, 32-35 and 57 patentable under 35 U.S.C. § 102(b) over U.S. 5,863,620 (Schafer II)?

Are claims 1, 3, 9-16 and 18 patentable under 35 U.S.C. § 102(b) over U.S. 2,868,162 (Knain)?

Are claims 1, 9 and 12 patentable under 35 U.S.C. § 102(b) over U.S. 5,476,545 (Schrauwers et al.)?

Are claims 1, 9 and 57 patentable under 35 U.S.C. § 102(b) over EP 0648715 (Shiraishi et al.)?

Are claims 1, 10 and 57 patentable under 35 U.S.C. § 102(b) over U.S. 3,818,860 (Rebentisch)?

Are claims 6-8 and 17 patentable under 35 U.S.C. § 103 over Schafer I?

Is claim 33 patentable under 35 U.S.C. § 103 over Shafer I in view of Kirk Othmer?

Are claims 2 and 4-7 patentable under 35 U.S.C. § 103 over Shafer II?

Are claims 6 and 7 patentable under 35 U.S.C. § 103 over Knain?

Are claims 2, 3, 6 and 7 patentable under 35 U.S.C. § 103 over Schrauwers et al.?

Is claim 8 patentable under 35 U.S.C. § 103 over Shiraishi et al.?

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VII. Grouping of Claims

The claims of each group stand or fall together, however, the groups do not stand or fall together.

Group I: Claims 1-3, 9-35 and 57

Group II: Claims 4 and 5

Group III: Claims 6 and 7

Group IV: Claim 8

VIII Argument

A. Rejections under 35 U.S.C. § 102(b)

ISSUE I

Are Claims 1-5, 9-16, 18-35 and 57 patentable under 35 U.S.C. § 102(b) over U.S. Patent 5,804,256 (Schäfer I)?

Schäfer I discloses a method of coating printed circuit boards. The apparatus described in Schäfer I for coating the printed circuit boards includes metering rolls 3, 4 that form a gap with the rubberized applicator rolls 1, 2 (Schäfer I, col. 4, lines 15-17).

For a reference to be deemed to anticipate a claimed invention under 35 U.S.C. § 102(b), the cited reference must teach each and every limitation of the claimed invention. Verdegaal Bros., Inc., v. Union Oil Co., 814 F.2d 628, 631 (Fed. Cir. 1987). If the reference fails to teach even one limitation of the claimed invention, then the claim is not anticipated under § 102(b). Atlas Powder Co. v. E.I. du Pont De Nemours & Co., 750 F.2d 1569, 1574 (Fed. Cir. 1984). It is well established that all limitations in a claim must be considered and that it is error to ignore specific limitations that distinguish over a cited reference. See, e.g., Application of Boe, 505 F.2d 1297 (C.C.P.A. 1974), citing In re Saether, 492 F.2d 849 (Cust. & Pat.App.1974); In re Glass, 472 F.2d 1388 (Cust. & Pat.App.1973). Claim 1 is directed to an apparatus for coating an article where the apparatus includes an applicator, a conveyor for sequentially transporting a plurality of articles to the applicator, and a metering bar positioned against the applicator to meter a predetermined amount of coating composition to the applicator for transfer to an article transported to the applicator by the conveyor. Schäfer I does not teach a metering bar. Instead Schäfer I discloses a metering roll. Schäfer I also does not teach a metering bar positioned against an applicator. Rather, Schäfer I expressly discloses that the metering

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roll forms a gap with the smooth rubberized applicator rolls; “The metering rolls 3,4 form a gap with the smooth rubberized applicator rolls 1,2 defining the desired film thickness” (emphasis added) (Schäfer I, col. 4, lines 15-17).

The December 5, 2002 Office action asserts the following assumption, “the metering bar [of Schafer I] by definition has to be positioned against the applicator roller or it would not function in the manner intended” and that “the drawings show the metering bar (4) against the applicator (1)” (Office action, page 5, lines 5-6). In other words, the Office action substitutes a subjective interpretation of the figures for that which is expressly taught by Shafer I. The position in the Office action is untenable in light of the fact that the express teaching in Shafer I is contrary to that position. Moreover, if a rejection relies on scientific theory, evidentiary support for the existence and meaning of that theory must be provided. M.P.E.P. 2144.02 *citing in re Grose*, 592 F.2d 1161, 201 U.S.P.Q. 797 (CCPA 1963). The Office action provides no scientific basis for the above-quoted assumption. Since the record is replete with references describing coating apparatuses that function without contact between a metering device and the applicator roller, the evidence does not support the asserted scientific theory, and the assumptions made in the Office action can be accorded no weight. Thus, since the record fails to establish that Shafer I anticipates the apparatus of claim 1, the rejection of claim 1 under 35 U.S.C. § 102(b) over Shafer I must be overruled.

Claims 2-5, 9-16, 18-35 and 57 are distinguishable over Schäfer I for at least the same reasons set forth above in distinguishing claim 1. Therefore the rejection of claims 2-5, 9-16, 18-35 and 57 under 35 U.S.C. § 102(b) over Schäfer I must be overruled.

Claims 4 and 5 are further distinguishable over Schäfer I for at least the following additional reason. Claim 4 is directed to the apparatus of claim 1, wherein the end of the metering bar positioned against the applicator has a radius of at least about 2.5 mm. Claim 5 is directed to the apparatus of claim 1, wherein the end of the metering bar positioned against the applicator has a radius of at least about 4.0 mm. Schäfer I does not teach a metering bar. To the contrary, as set forth above Schäfer I discloses a metering roller. Schäfer I also does not teach that the end of a metering bar positioned against an applicator should have any particular radius -let alone a radius of at least about 2.5 mm or at least about 4.0 mm. Because Schäfer I does not teach required elements of claims 4

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and 5, Schäfer I cannot anticipate claims 4 and 5. For at least this additional reason the rejection of claims 4 and 5 under 35 U.S.C. § 102(b) over Schäfer I must be overruled.

Claims 10, 14, 15, 21, 28, 30 and 31 are further distinguishable over Schäfer I for at least the following additional reason. Claim 10 depends from claim 1 and further indicates that the applicator includes an endless belt. Schäfer I does not teach an applicator that includes an endless belt. Nothing in the record supports a finding to the contrary. The July 8, 2002 Office action refers to Figure 2 of Schäfer I for support for the rejection of claim 10. However, the only description of Figure 2 provided in Schäfer I is at column 3, lines 28-29, wherein Figure 2 is described as a "transporting means." Nothing in Schäfer I teaches that Figure 2 illustrates an applicator. Moreover, claim 1, from which claim 10 depends, states that the apparatus includes an applicator, a conveyor, and a metering bar. Claim 1 further states that the metering bar is positioned against the applicator to meter a predetermined amount of coating composition to the applicator for transfer to an article. Schäfer I does not teach a metering bar positioned against the transporting means illustrated in Figure 2 –let alone a metering bar positioned against the transporting means of Figure 2 to meter a predetermined amount of coating composition to the transporting means of Figure 2. Schäfer I thus fails to teach the apparatus of claim 10 and the rejection thereof under 35 U.S.C. § 102(b) over Schäfer I must be overruled. Likewise, the rejection of claims 14, 15, 21, 28, 30 and 31, which are also directed to an apparatus in which the applicator includes an endless belt, under 35 U.S.C. § 102(b) over Schäfer I must also be overruled for at least this additional reason.

ISSUE II

Are claims 1, 3, 9, 11-13, 16, 18-20, 25-27, 32-35 and 57 patentable under 35 U.S.C. § 102(b) over U.S. Patent 5,863,620 (Schäfer II)?

Schäfer II discloses a process that employs a roll coating apparatus that includes metering rolls 2,4. The metering rolls 2,4 are so arranged that a "narrow gap" remains between the metering roll 2,4 and the respective applicator roll 1,3 (column 4, lines 48-52).

As set forth above, claim 1 is directed to an apparatus for coating an article that includes a metering bar positioned against an applicator to meter a predetermined amount

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of coating composition to the applicator for transfer to an article transported to the applicator by the conveyor. Schäfer II also fails to teach a metering bar or a metering bar positioned against an applicator as required by claim 1. Instead, Schäfer II refers to metering rolls and further discloses spacing a metering roll such that a "narrow gap remains between the metering roll 2,4 and the respective applicator roll" (emphasis added) (Schäfer II, column 4, lines 48-52). Schäfer II thus lacks required elements of the apparatus of claim 1. Since it has not been established that Schäfer II anticipates the apparatus of claim 1, the rejection of claim 1 under 35 U.S.C. § 102(b) over Schäfer II cannot stand and must be overruled.

Claims 3, 9, 11-13, 16, 18-20, 25-27, 32-35 and 57 are distinguishable over Schäfer II for at least the same reasons set forth above in distinguishing claim 1. Appellants submit, therefore, that the rejection of claims 3, 9, 11-13, 16, 18-20, 25-27, 32-35 and 57 under 35 U.S.C. § 102(b) over Schäfer II is likewise unwarranted and must be overruled.

ISSUE III

Are claims 1, 3, 9-16 and 18 patentable under 35 U.S.C. § 102(b) over U.S. Patent 2,868,162 (Knain)?

Knain discloses a machine having endless belts for applying a painted coating to cylindrical articles such as electrical conduit or pipe.

As stated above, claim 1 is directed to an apparatus for coating an article that includes a metering bar positioned against an applicator to meter a predetermined amount of coating composition to the applicator for transfer to an article. Knain does not teach a metering bar –let alone a metering bar positioned against an applicator to meter a predetermined amount of coating composition to the applicator for transfer to an article. The July 8th Office action indicates that element 47 of Knain is a metering bar. Element 47 of the Knain apparatus functions to remove excess paint from the endless belt after the belt has applied the paint to the article to be coated. Element 47 of Knain does not meter a predetermined amount of coating composition to the applicator for transfer to an article. Rather, element 47 entirely removes excess paint from the belt after the belt has applied the paint to the article. In addition, element 47 removes the excess paint from the

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"noncoating" areas of the belt. Element 47 does not contact the "working surface of the belt," i.e., the area of the belt that carries the paint to be coated. As Knain explains:

The paint on the belt naturally tends to move toward the side edges [of the belt and that] . . . additional scraper bars 47 are used to remove any paint that might have been deposited in the undercut portions of the belts. In other words, the side edges of the belts are given under cut extensions which [sic] are used to carry off the excess paint that might build up on the edges. Hence, the working surface of the belt is that part of the belt between the undercut portions 45.

Knain, column 4, lines 52-60. Thus, element 47 does not constitute a metering bar positioned against an applicator to meter a predetermined amount of coating composition to the applicator.

The December 5th Office action appears to take the position that element 31 of Knain is a metering bar. However, element 31 is a roller (see Knain, column 3, lines 66 and column 4, line 26). A roller is not a metering bar. Knain thus lacks a required element of the apparatus of claim 1. Therefore, Knain cannot anticipate the apparatus of claim 1, and the rejection of claim 1 under 35 U.S.C. § 102(b) over Knain must be overruled.

Claims 3, 9-16 and 18 are distinguishable under 35 U.S.C. § 102(b) over Knain for at least the same reasons set forth above in distinguishing claim 1. Appellants submit, therefore, that the rejection of claims 3, 9-16 and 18 under 35 U.S.C. § 102(b) over Knain must likewise be overruled.

ISSUE IV

Are claims 1, 9 and 12 patentable under 35 U.S.C. § 102(b) over U.S. 5,476,545 (Schrauwers et al.)?

Schrauwers et al. disclose a rotary tile glazing and decorating machine.

The December 5th Office action takes the position that element 16 of Schrauwers et al. is a metering bar. According to Schrauwers et al., element 16, i.e., a doctor blade, "guarantees" the cleanliness of the external surface of the transfer cylinder 5. Schrauwers et al. explain:

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The cleanliness of the external surface of the transfer cylinder 5 is guaranteed by a doctor 16 which is kept pressed against the external cylindrical surface and alternates parallel to the rotation axis of the cylinder. Thus the external surface of the transfer cylinder 5 is freed of any residual glaze before coming into contact with the external cylindrical surface of the matrix-bearing cylinder 4 and receiving fresh glaze.

Schrauwers et al., column 2, lines 41-48.

The doctor blade 16 of Schrauwers et al. does not meter a predetermined amount of coating composition to the applicator for transfer to an article. Rather, the doctor blade 16 of Schrauwers et al. removes the entire excess glaze from the surface of the transfer cylinder and does so after the transfer cylinder has applied the glaze to the tile. Appellants further note that, whether upon initiation or in the middle of the coating operation, glaze is applied to the transfer cylinder 5 of Schrauwers et al. by the matrix-bearing cylinder 4 and the special device 45 after the transfer cylinder 5 has been contacted by element 16. Therefore, it cannot be said that element 16 meters a predetermined amount of a coating composition to the applicator roller for application to a substrate. Schrauwers et al. thus fail to teach a metering bar positioned against an applicator. Since it has not been established that Schrauwers et al. anticipate claim 1, the rejection of claim 1 under 35 U.S.C. § 102(b) over Schrauwers et al. must be overruled.

Claims 9 and 12 are distinguishable under 35 U.S.C. § 102(b) over Schrauwers et al. for at least the same reasons set forth above in distinguishing claim 1. Therefore the rejection of claims 9 and 12 under 35 U.S.C. § 102(b) over Schrauwers et al. must likewise be overruled.

Claim 12 is further distinguishable over Schrauwers et al. for at least the following additional reason. Claim 12 depends from claim 11, which depends from claim 1. Claim 12 is directed to the apparatus of claim 1 wherein the first applicator includes a roller and the apparatus further includes a second applicator and a second metering bar positioned against the second applicator to meter a predetermined amount of coating composition to the second applicator, the second applicator being positioned to receive an article from the conveyor. Schrauwers et al. do not teach an apparatus that includes a first applicator, a first metering bar, a second applicator and a second metering

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bar. Nothing in the record establishes anything to the contrary. Therefore it cannot be disputed that Schrauwers et al. lack required elements of the apparatus of claim 12. Since it has not been established that Schrauwers et al. anticipate the apparatus of claim 12, the rejection of claim 12 under 35 U.S.C. § 102(b) over Schrauwers et al. must be overruled for at least this additional reason.

ISSUE V

Are claims 1, 9 and 57 patentable under 35 U.S.C. § 102(b) over EP 648 715 (Shiraishi et al.)?

Shiraishi et al. disclose an apparatus for manufacturing an automobile window glass with a shade band. Shiraishi et al. explain that the rubber roll 5 is supplied with the paste 2 at a constant rate by the doctor blade 6 (column 3, lines 15-16). The rubber roll 5 is flexed to an arcuate shape complementary to the bending blade 7 until one axial end 5a thereof is held in direct contact with the sheet 1 of glass (column 3, lines 18-30).

As stated above, claim 1 is directed to an apparatus for coating an article that includes a metering bar positioned against an applicator to meter a predetermined amount of coating composition to the applicator for transfer to an article. Shiraishi et al. do not teach a metering bar positioned against an applicator to meter a predetermined amount of coating composition to the applicator for transfer to an article. Shiraishi et al. explain that a bending blade 7 exerts a force against a rubber roll 5, which causes the rubber roll to flex to an arcuate shape that is complementary to the bending blade until one axial end of the rubber roll is in direct contact with the sheet of glass 1 (the article that is being coated), and the opposite axial end of the rubber roll is spaced upwardly from the sheet of glass (Shiraishi et al., column 3, lines 18-30). The bending blade 7 of Shiraishi et al. thus impacts the way in which the composition that is already on the applicator roller is coated onto the sheet of glass by the applicator. The bending blade 7 of Shiraishi et al. does not meter a predetermined amount of coating composition to the applicator for transfer to an article transported to the applicator by the conveyor as required by claim 1. Thus, Shiraishi et al. do not teach a required element of the apparatus of claim 1. Since Shiraishi et al. lack a required element of claim 1, Shiraishi et al. cannot anticipate the

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apparatus of claim 1. Accordingly, the rejection of claim 1 under 35 U.S.C. § 102(b) over Shirashi et al. must be overruled.

Claims 9 and 57 are distinguishable under 35 U.S.C. § 102(b) over Shirashi et al. for at least the same reasons set forth above in distinguishing claim 1. Therefore, the rejection of claims 9 and 57 under 35 U.S.C. § 102(b) over Shirashi et al. must also be overruled.

ISSUE VI

Are claims 1, 10 and 57 patentable under 35 U.S.C. § 102(b) over U.S. 3,818,860 (Rebentisch)?

Rebentisch discloses an applicator for applying a heated material such as a hot melt adhesive to a work piece (see Rebentisch Abstract).

Claim 1 is directed to an apparatus for coating an article that includes a metering bar positioned against an applicator to meter a predetermined amount of coating composition to the applicator for transfer to an article. Rebentisch discloses that the doctor blade 6 of his apparatus reduces the adhesive to a desired thickness. Nothing in Rebentisch teaches that doctor blade 6 is positioned against the applicator 3. To the contrary, Figures 1 and 2 of Rebentisch depict a gap between the doctor blade 6 and the applicator 3. Thus, the most that can be gleaned from Rebentisch regarding the positioning of the doctor blade is that the doctor blade is not positioned against an applicator. Since Rebentisch lacks a required element of the apparatus of claim 1, Rebentisch does not anticipate the apparatus of claim 1. Accordingly, the rejection of claim 1 under 35 U.S.C. § 102(b) over Rebentisch must be overruled.

Claims 10 and 57 are distinguishable under 35 U.S.C. § 102(b) over Rebentisch for at least the same reasons set forth above in distinguishing claim 1. Accordingly, the rejection of claims 10 and 57 under 35 U.S.C. § 102(b) over Rebentisch must also be overruled.

B. Rejections under 35 U.S.C. § 103

ISSUE VII

Are claims 6-8 and 17 patentable under 35 U.S.C. § 103 over Schäfer I?

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The rejection of claims 6-8 and 17 under 35 U.S.C. § 103 over Schäfer I is based upon the above-refuted premise that Schäfer I teaches a metering bar positioned against an applicator. Since the premise on which the rejection of claims 6-8 and 17 under 35 U.S.C. § 103 over Schäfer I is based has been refuted, the rejection cannot stand and must be overruled.

Claims 6 and 7 are further distinguishable over Schäfer I for at least the following additional reasons. Claim 6 is directed to the apparatus of claim 1 wherein the metering bar and the applicator are arranged to enable the metering bar to exert a force of at least about 35 g/cm width against the applicator. Claim 7 is directed to an apparatus in which the metering bar and the applicator are arranged to enable the metering bar to exert a force of from about 45 g/cm width to about 900 g/cm width against the applicator. When an obviousness rejection is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. See B.F. Goodrich Co. v. Aircraft Braking Sys. Corp., 72 F.3d 1577, 1582, 37 U.S.P.Q.2D (BNA) 1314, 1318 (Fed. Cir. 1996). Nothing in Schäfer I teaches or suggests an apparatus that includes a metering bar, a metering bar positioned against an applicator, or a metering bar positioned against an applicator such that it would exert a force against the applicator. Moreover, nothing in Schäfer I teaches or suggests that the force exerted by a metering bar against an applicator is an important property or a result effective variable –let alone that such force should be optimized. “A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of [the] variable might be characterized as routine experimentation.” M.P.E.P. 2144.05 II. B, citing In re Antoine, 559 F.2d 618 (CCPA 1977). Since Schäfer I does not even teach that a metering device is positioned against the applicator, it cannot be disputed that Schäfer I fails to teach or suggest that the force exerted by a metering bar against an applicator is a result effective variable. Therefore the skilled artisan would have no reason to experiment with the force exerted by a metering bar against the applicator and further would have no reason to arrive at a force of at least about 35 g/cm width or a force of from about 45 g/cm width to about 900 g/cm width. For at least this additional reason the rejection of claims 6 and 7 under 35 U.S.C. § 103 over Schäfer I must be overruled.

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Claim 8 is directed to the apparatus of claim 1 wherein the conveyor and the applicator are configured to enable the applicator to apply a coating to the edge face of a roll of tape disposed between the conveyor and the applicator. Nothing in Schäfer I teaches or suggests selecting a metering bar, positioning the metering bar against the applicator roller, and then configuring the apparatus to enable the applicator to apply a coating to the edge face of a roll of tape. To the contrary, Schäfer I discloses a metering roller, specifies that there is a gap between the metering roller and the applicator, and further specifies that the apparatus is configured to coat printed circuit boards. Nothing in Schäfer I teaches or suggests that an apparatus suitable for coating printed circuit boards is capable of coating the edge face of a roll of tape. Accordingly, the skilled artisan would have no reason to modify the apparatus of Schäfer I to achieve the apparatus of claim 8. For at least this additional reason the rejection of claims 8 and 17 under 35 U.S.C. § 103 over Schäfer I must be overruled.

ISSUE IIX

Are claim 33 patentable under 35 U.S.C. § 103 over Schäfer I in view of Kirk Othmer?

The rejection of claim 33 under 35 U.S.C. § 103 over Schäfer I in view of Kirk Othmer is based upon the above-refuted premise that Schäfer I teaches a metering bar positioned against an applicator. Since the premise on which the rejection is based has been refuted and since it is undisputed that nothing in Kirk Othmer teaches or suggests positioning a metering bar against an applicator, the rejection of claim 33 cannot stand. Appellants submit, therefore, that the rejection of claim 33 under 35 U.S.C. § 103 over Schäfer I in view of Kirk Othmer must be overruled.

ISSUE IX

Are claims 2 and 4-7 patentable under 35 U.S.C. § 103 over Schäfer II?

The rejection of claims 2 and 4-7 under 35 U.S.C. § 103 over Schäfer II is based upon the above-refuted premise that Schäfer II teaches a metering bar positioned against an applicator. Since the premise on which the rejection is based has been refuted, the

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rejection cannot stand. Appellants submit, therefore, that the rejection of claims 2 and 4-7 under 35 U.S.C. § 103 over Schäfer II must be overruled.

Claims 4 and 5 are further distinguishable over Schäfer II for at least the following additional reasons. Claim 4 is directed to the apparatus of claim 1, wherein the end of the metering bar positioned against the applicator has a radius of at least about 2.5 mm. Claim 5 is directed to the apparatus of claim 1, wherein the end of the metering bar positioned against the applicator has a radius of at least about 4.0 mm. Schäfer II does not teach a metering bar or a metering bar positioned against an applicator. To the contrary, as set forth above, Schäfer II discloses a metering roller and further discloses that there is a gap between the metering roller and the applicator. Schäfer II also does not teach or suggest that the end of a metering bar positioned against an applicator should have any particular radius -let alone a radius of at least about 2.5 mm or at least about 4.0 mm. Therefore, the skilled artisan would have no reason to use a metering bar, and further would have no reason to select a metering bar having a radius of at least about 2.5 mm. The July 8th Office action asserts, "It would have been obvious to one of ordinary skill in the art to use a metering roller of the smallest desired dimension to effect uniform metering of the applicator roller yet save on manufacturing costs." July 8th Office action, page 9. Appellants first note that this statement evidences that the Office action recognizes that Schäfer II discloses a metering roller -not a metering bar. Appellants next note that this rejection is based on assumptions that are not substantiated in the record. Nothing in Schäfer II teaches or suggests that the diameter of a metering bar is a result effective variable or that it effects the manufacturing costs. The skilled artisan would have no reason to optimize something that is not even taught in Schäfer II (see, M.P.E.P. 2144.05 II. B). For at least these additional reasons a prima facie case of obviousness of claims 4 and 5 not been established. Accordingly, the rejection of claims 4 and 5 under 35 U.S.C. § 103 over Schäfer II must be overruled.

Claims 6 and 7 are further distinguishable over Schäfer II for at least the following additional reasons. Claim 6 is directed to the apparatus of claim 1 wherein the metering bar and the applicator are arranged to enable the metering bar to exert a force of at least about 35 g/cm width against the applicator. Claim 7 is directed to an apparatus in which the metering bar and the applicator are arranged to enable the metering bar to exert

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a force of from about 45 g/cm width to about 900 g/cm width against the applicator. Nothing in Schäfer II teaches or suggests an apparatus that includes a metering bar, a metering bar positioned against an applicator, or a metering bar positioned against an applicator such that it would exert a force against the applicator. Moreover, nothing in Schäfer II teaches or suggests that the force exerted by a metering bar against an applicator is an important property or a result effective variable—let alone that such force should be optimized. “A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of [the] variable might be characterized as routine experimentation.” See, M.P.E.P. 2144.05 II. B. Since the force exerted by a metering bar against an applicator is not recognized by Schäfer II as a result effective variable, the skilled artisan would have no reason to experiment with the force exerted by a metering bar against the applicator and further would have no reason to arrive at a force of at least about 35 g/cm width or a force of from about 45 g/cm width to about 900 g/cm width. For at least this additional reason the rejection of claims 6 and 7 under 35 U.S.C. § 103 over Schäfer II must be overruled.

ISSUE X

Are claims 6 and 7 patentable under 35 U.S.C. § 103 over Knain?

The rejection of claims 6 and 7 under 35 U.S.C. § 103 over Knain is based upon the above-refuted premise that Knain teaches a metering bar positioned against an applicator. Since the premise on which the rejections are based has been refuted, the rejections cannot stand. Appellants submit, therefore, that the rejections of claims 6 and 7 under 35 U.S.C. § 103 over Knain must be overruled.

Claims 6 and 7 are further distinguishable over Knain for at least the following additional reasons. Claim 6 is directed to the apparatus of claim 1 wherein the metering bar and the applicator are arranged to enable the metering bar to exert a force of at least about 35 g/cm width against the applicator. Claim 7 is directed to an apparatus in which the metering bar and the applicator are arranged to enable the metering bar to exert a force of from about 45 g/cm width to about 900 g/cm width against the applicator. Nothing in Knain teaches or suggests an apparatus that includes a metering bar positioned

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against an applicator. To the contrary, Knain disclose a metering roller. Moreover, nothing in Knain teaches or suggests that the force exerted by a metering bar against an applicator is an important property or a result effective variable –let alone that such force should be optimized. Since the force exerted by a metering bar against an applicator is not recognized by Knain as a result effective variable, the skilled artisan would have no reason to experiment with the force exerted by a metering bar against the applicator and further would have no reason to arrive at a force of at least about 35 g/cm width or a force of from about 45 g/cm width to about 900 g/cm width. For at least this additional reason the rejection of claims 6 and 7 under 35 U.S.C. § 103 over Knain must be overruled.

ISSUE XI

Are claims 2, 3, 6 and 7 patentable under 35 U.S.C. § 103 over Schrauwers et al?

The rejection of claims 2, 3, 6 and 7 under 35 U.S.C. § 103 over Schrauwers et al. is based upon the above-refuted premise that Schrauwers et al. teach a metering bar positioned against an applicator. Since the premise on which the rejections are based has been refuted, the rejections cannot stand. Appellants submit, therefore, that the rejections of claims 2, 3, 6 and 7 under 35 U.S.C. § 103 over Schrauwers et al. must be overruled.

Claims 6 and 7 are further distinguishable over Schrauwers et al. for at least the following additional reasons. Claim 6 is directed to the apparatus of claim 1 wherein the metering bar and the applicator are arranged to enable the metering bar to exert a force of at least about 35 g/cm width against the applicator. Claim 7 is directed to an apparatus in which the metering bar and the applicator are arranged to enable the metering bar to exert a force of from about 45 g/cm width to about 900 g/cm width against the applicator. Nothing in Schrauwers et al. teaches or suggests an apparatus that includes a metering bar positioned against an applicator to meter a predetermined amount of coating composition to the applicator for transfer to an article or such a metering bar positioned against an applicator such that it would exert a force against the applicator. Moreover, nothing in Schrauwers et al. teaches or suggests that the force exerted by a metering bar against an applicator is an important property or a result effective variable –let alone that such force should be optimized. Since the force exerted by a metering bar against an applicator is

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not recognized by Schrauwers et al. as a result effective variable, the skilled artisan would have no reason to experiment with the force exerted by a metering bar against the applicator and further would have no reason to arrive at a force of at least about 35 g/cm width or a force of from about 45 g/cm width to about 900 g/cm width. For at least this additional reason the rejection of claims 6 and 7 under 35 U.S.C. § 103 over Schrauwers et al. must be overruled.

ISSUE XII

Is claim 8 patentable under 35 U.S.C. § 103 over Shirashi et al.?

The rejection of claim 8 under 35 U.S.C. § 103 over Shirashi et al. is based upon the above-refuted premise that Shirashi et al. teach a metering bar positioned against an applicator to meter a predetermined amount of coating composition to the applicator for transfer to an article. Since the premise on which the rejection is based has been refuted, the rejection cannot stand. Appellants submit, therefore, that the rejection of claim 8 under 35 U.S.C. § 103 over Shirashi et al. must be overruled.

The rejection of claim 8 under 35 U.S.C. § 103 over Shirashi et al. is further deficient for at least the following additional reason. Claim 8 is directed to the apparatus of claim 1 wherein the conveyor and the applicator are configured to enable the applicator to apply a coating to the edge face of a roll of tape disposed between the conveyor and the applicator. The apparatus of Shirashi et al. applies a tapered strip of composition on a longitudinal edge of a sheet of glass. Nothing in Shirashi et al. teaches or suggest that an apparatus configured to coat a tapered strip of composition along the longitudinal edge of a major surface of a sheet of glass has any application with respect to an edge face of a roll of tape. Accordingly, the skilled artisan would not think to modify the apparatus of Shirashi et al. to enable the applicator to apply a coating to the edge face of a roll of tape disposed between the conveyor and the applicator. For at least this additional reason, a prima facie case of obviousness of claim 8 has not been established and the rejection of claim 8 under 35 U.S.C. § 103 over Shirashi et al. must be overruled.

The claims now pending in the application are in condition for allowance. A ruling in accordance therewith is respectfully requested.


An appendix of the claims involved in the appeal is attached at Tab 1.

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Please charge any fees owing or credit any over payments made to Deposit Account No.
501,171.

Respectfully submitted,

Date: April 10, 2003


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PAGE 20

TAB 1

APPENDIX OF CLAIMS

1. An apparatus for coating an article, said apparatus comprising:
an applicator;
a conveyor for sequentially transporting a plurality of articles to said applicator; and
a metering bar positioned against said applicator to meter a predetermined amount of coating composition to said applicator for transfer to an article transported to said applicator by said conveyor.
2. The apparatus of claim 1, wherein said applicator comprises a roller having a durometer of no greater than about 55 Shore A.
3. The apparatus of claim 1, wherein said applicator is configured to enable the application of a substantially uniform layer of coating composition on articles having different dimensions.
4. The apparatus of claim 1 wherein the end of said metering bar positioned against said applicator has a radius of at least about 2.5 mm.
5. The apparatus of claim 1 wherein the end of said metering bar positioned against said applicator has a radius of at least about 4.0 mm.
6. The apparatus of claim 1, wherein said metering bar and said applicator are arranged to enable said metering bar to exert a force of at least about 35 g/cm width against said applicator.
7. The apparatus of claim 1, wherein said metering bar and said applicator are arranged to enable said metering bar to exert a force of from about 45 g/cm width to about 900 g/cm width against said applicator.

8. The apparatus of claim 1, wherein said conveyor and said applicator are configured to enable said applicator to apply a coating to the edge face of a roll of tape disposed between said conveyor and said applicator.

9. The apparatus of claim 1, wherein said applicator comprises a roller.

10. The apparatus of claim 1, wherein said applicator comprises an endless belt.

11. The apparatus of claim 1, further comprising a second applicator and a second metering bar positioned against said second applicator to meter a predetermined amount of coating composition to said second applicator, said second applicator being positioned to receive an article from said conveyor.

12. The apparatus of claim 11, wherein said first applicator comprises a roller.

13. The apparatus of claim 12, wherein said second applicator comprises a roller.

14. The apparatus of claim 11, wherein said first applicator comprises an endless belt.

15. The apparatus of claim 14, wherein said second applicator comprises an endless belt.

16. The apparatus of claim 11, wherein said apparatus is capable of substantially simultaneously

a) transferring a coating composition from said first applicator to a first side of an article, and

b) transferring a coating composition from said second applicator to a second side of the article opposite said first side of the article.

17. The apparatus of claim 11, wherein the article is a roll of tape and said apparatus is capable of substantially simultaneously

a) transferring a coating composition from said first applicator to a first edge face of a roll of tape, and

b) transferring a coating composition from said second applicator to a second edge face of the roll of tape opposite said first edge face of the roll of tape.

18. The apparatus of claim 11, wherein said first applicator and said second applicator are positioned to maintain an article between said first applicator and said second applicator.

19. A system for manufacturing coated articles, said system comprising
a first station comprising a coating apparatus comprising
an applicator,
a conveyor capable of sequentially transporting a plurality
of articles to said applicator, and
a metering bar positioned against said applicator to meter a
predetermined amount of coating composition to said applicator
for transfer to an article transported to said applicator by said
conveyor; and
a second station for solidifying the coating composition disposed
on the article.

20. The system of claim 19, wherein said applicator comprises a roller.

21. The system of claim 19, wherein said applicator comprises an endless belt.

22. The system of claim 19, wherein said conveyor is capable of transporting a coated article to said second station.

23. The system of claim 19, further comprising a second conveyor capable of transporting a coated article from said first station to said second station.

24. The system of claim 19, further comprising a second conveyor comprising a first endless belt and a second endless belt, said second conveyor being positioned to transport a coated article to said second station.

25. The system of claim 19, further comprising a second applicator positioned to receive an article from said conveyor, and a second metering bar positioned against said second applicator to meter a predetermined amount of coating composition to said second applicator.

26. The system of claim 19, further comprising a second applicator positioned opposite said first applicator, and a second metering bar positioned against said second applicator to meter a predetermined amount of coating composition to said second applicator.

27. The system of claim 26, wherein said first applicator comprises a roller and said second applicator comprises a roller.

28. The system of claim 26, wherein said first applicator comprises an endless belt.

29. The system of claim 19, further comprising a second conveyor positioned to transport a coated article to said second station.

30. The system of claim 19, further comprising a second conveyor comprising a first endless belt and a second endless belt, said second conveyor being positioned to transport a coated article to said second station.

31. The system of claim 30, wherein said second conveyor is capable of transporting a coated article between said first endless belt and said second endless belt.

32. The system of claim 19, wherein said second station comprises a source of radiation.

33. The system of claim 32, wherein said source of radiation is capable of generating radiation selected from the group consisting of ultraviolet radiation and electron beam radiation.

34. The system of claim 19, wherein said solidifying comprises curing.

35. The system of claim 19, wherein said solidifying comprises drying.

57. An apparatus for coating an article, said apparatus comprising:
an applicator roller;
a conveyor for sequentially transporting a plurality of articles to said roller; and
a metering bar positioned against said roller to meter a predetermined amount of coating composition to said roller for transfer to an article transported to said applicator by said conveyor.

Docket No.: 55559US002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John R. Jacobson et al.
Serial No.: 09/808,584
Filed: 3/14/2001
Title: COATING APPARATUS

Art Unit: 1734
Examiner: Edwards

Assistant Commissioner for Patents
Washington, D.C. 20231
BOX AF

TRANSMITTAL LETTER

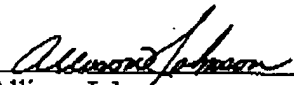
Enclosed for filing in the above-captioned application please find:

1) Appeal Brief (17 pages) including Appendix of claims (5 pages) (in triplicate).

Please charge any fees owing or credit any overpayment made to Deposit Account No. 501,171.

Respectfully submitted,

Date: April 10, 2003


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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Serial No.: 09/808,584
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